

REMARKS

Claims 1-20 were originally presented in the subject application. Claims 1-3, 6-10, 13-16, 19 and 20 were amended, and claims 4-5, 11-12 and 17-18 canceled, in a response dated October 23, 2007. Claim 1 has hereinabove been amended to more particularly point out and distinctly claim the subject invention. Claims 8-10, 13-16 and 19-20 have herein been canceled without prejudice in order to separate the non-method claims into a separate application. Applicant reserves the right to file the non-method claims in a continuation application. No claims have herein been added. Therefore, claims 1-3 and 6-7 remain in this case.

The addition of new matter has been scrupulously avoided. In that regard, support for the amendment to claim 1 can be found in the specification at, for example, numbered paragraphs 0013 and 0018.

Applicant sincerely appreciates the interview granted to Applicant's undersigned representative on April 21, 2008. The amendments herein reflect that discussion.

Applicant respectfully requests reconsideration and withdrawal of the grounds of rejection.

35 U.S.C. §112 Rejection

The Office Action rejected claims 1-3, 6-10, 13-16, and 19-20 under 35 U.S.C. §112, as allegedly indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. Applicant respectfully, but most strenuously, traverses this rejection as it applies to the amended claim.

Applicant submits that the amendments herein address the concerns noted by the Examiner. In particular, a job can run out of order via backfilling where, for example, the prior scheduled job completes sooner than expected or otherwise terminates early enough before the scheduled start of the next job.

Therefore, Applicants submit that amended claims 1-3, 6-10, 13-16, and 19-20 overcome the stated rejection.

35 U.S.C. §103 Rejection

The Office Action rejected claims 1-3, 6-10, 13-16, 19-20 under 35 U.S.C. §103(a), as being obvious over DeBettencourt et al. (U.S. Patent No. 6,279,001) in view of Liu et al (U.S. Patent No. 5,31,089). Applicant respectfully, but most strenuously, traverses this rejection as it applies to the amended claims.

Amended claim 1 recites a method of balancing workload of a grid computing environment, grid computing enabling virtualization of distributed computing and data resources to create a single system image from a plurality of systems. The method comprises obtaining scheduler information, by a manager daemon within one system of a plurality of systems in a grid computing environment, from a scheduler of another system of the grid computing environment. The scheduler information includes current free nodes of the another system, job queue of waiting jobs for the another system, shadow time for the next waiting job of the another system indicating how long the job needs to wait for resources, and one or more resources currently unavailable due to shadow time, wherein the plurality of systems are at least one of heterogeneous and geographically distant from each other. The method further comprises performing by the manager daemon workload balancing among at least two systems of the plurality of systems in the grid computing environment, each system of the at least two systems comprising a scheduler to schedule workload on its system. The workload balancing using at least a portion of the obtained scheduler information, and wherein the workload balancing comprises backfill scheduling a job. The backfill scheduling allows the job to run out of order as long as it does not affect the start time of another job scheduled to execute.

Applicant has amended the claim to make clear the differences with the cited art. For example, grid computing is different from multiple servers on the same system as in DeBettencourt, which does not present a single system view from multiple systems to a user. Further, the systems in a grid computing environment are heterogeneous and/or geographically distant. Thus, the environments are different.

As another example, queue delay, alleged present in DeBettencourt is different from shadow time. As set forth in the claims, shadow time indicates how long the next waiting job of another system needs to wait for resources. Shadow time does not refer to how long a job has to wait in line, but how long before resources needed to execute the job will become available.

As still another example, backfill scheduling differs from the scenario of Liu (pull job from busy system A to the end of the line of system B having capacity. See the comments above with respect to the 112 rejection.

Therefore, Applicant submits that none of independent claims 1, 8 or 15 can be rendered obvious over DeBettencourt in view of Liu.

CONCLUSION

Applicant submit that the dependent claims not are allowable for the same reasons as the independent claims from which they directly or ultimately depend, as well as for their additional limitations.

For all the above reasons, Applicant maintain that the claims of the subject application define patentable subject matter and earnestly request allowance of claims 1-3 and 6-7

If a telephone conference would be of assistance in advancing prosecution of the subject application, Applicant' undersigned attorney invites the Examiner to telephone him at the number provided.

Respectfully submitted,



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